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## SPECIAL ARTICLES

THE ROOT-ROT DISEASE OF THE APPLE  
IN VIRGINIA

AN unusually destructive rotting of the roots of apple trees is prevalent in the chief orchard sections of Virginia. The infectiousness of this condition is shown in the death of adjoining trees in groups of considerable numbers irrespective of soil conditions or topography and the death of replants set in holes from which rotted trees were removed.

The symptoms of this disease have been known for some time, but the causative organism has not been determined.

Isolations from diseased roots by the writers from a number of orchards in the "Valley" and "Piedmont" sections of the state have yielded cultures of an imperfect fungus which appears to be the conidial stage of a species of *Xylaria*. Inoculations made from pure culture of these isolations into bark wounds of living apple roots in both damp chambers and in the field have produced typical rotting of the bark and wood, and the introduced fungus has been obtained in pure culture from the margins of these infected portions.

Recently perithecial stromata of *Xylaria polymorpha* (Pers.) Grev. have been found on roots of apple trees in various stages of typical root-rot attack and on the stumps of several deciduous trees in a small patch of woodland immediately adjoining the orchard in question. Cultures obtained from germinated ascospores of this fungus are being used for additional inoculations into apple roots.

Pending the results of these inoculations, it seems reasonably certain that a species of *Xylaria* is responsible for the root-rot disease of the apple in Virginia. It is possible that more than one species of *Xylaria* is involved, since certain constant cultural distinctions exist between some of the isolations; these, however, may be varietal rather than specific.

Apparently all varieties of the apple are susceptible and probably equally so. Observations indicate that the disease may be spread in cultivation or in the removal of borers, in contact between roots systems of diseased and

healthy trees, and by surface washing of spores or other infective material.

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THE AMERICAN MATHEMATICAL  
SOCIETY

THE twenty-third annual meeting of the American Mathematical Society, which was held at Columbia University on Wednesday and Thursday, December 27-28, 1916, was in several respects an exceptional occasion. It took place in the midst of the convocation week series of meetings of the American Association for the Advancement of Science and its long train of affiliated societies, and was immediately followed by the second annual meeting of the newly organized Mathematical Association of America, with which the society has not only a large common membership, but also a general community of interest highly beneficial to both. The annual meeting is always one of the largest of the year, being the season of the election of officers and other members of the council and the transaction of important business. This year it was especially marked by the delivery of the retiring address of President E. W. Brown, of Yale University, who chose as his subject "The relations of mathematics to the natural sciences." This was presented before a joint session of the American Mathematical Society, the Mathematical Association of America, the American Astronomical Society, and Section A of the American Association, and was followed by the retiring address of Vice-president A. O. Leuschner, of Section A, on "Derivation of orbits—theory and practice." A joint dinner of four organizations was held on Thursday evening at the Park Avenue Hotel, with an attendance of 143 members and friends. Much of the credit for the great success of the meetings is due to the joint committee on arrangements and to the program committees of the Mathematical Association.

Under all these favorable circumstances the attendance at the four sessions of the society exceeded all previous records, the number of members present being 131. President Brown occupied the chair, being relieved by Vice-presidents Hedrick and Snyder and Professor G. D. Olds. The council announced the election of the following persons to membership in the society: Professor H. H. Conwell, University of Idaho; Mr. Robert